BEGAM, L.G., kand. tekhn. nauk; VOLCHENKOV, G.Ya., inzh.

Suggestions for changing the standard designs for water pipes.
Transp. stroi. 15 no.6:43-45 Je '65.   (MIRA 18:12)

GEOGRAPHY & GEOLOGY

Periodicals: GEOLOGICKE PRACE; ZPRAVY. No. 14, 1958

KANTOROVA, V.; BEGAN, A.   The klippenbelt in the wider environs of
Pruske; a preliminary report. p. 107

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No, 5.
                                            May 1959, Unclass.

BEGAN, L.I., inzh.

Liquid metal stamping of parts similar to solid nonuniformly thick caps. Mashinostroenie no.4:54-55 Jl.-Ag '55.

(MIRA 18:8)

L 20080-65 EPF(n)-2/EPA(s)-2/EWP(k)/EWT(m)/EWP(b)/EWA(d)/EWP(t)   Pf-4/Pt-10/
Pu-4   WW/JD/HW/JO

ACCESSION NR: AP4049118   S/0182/64/000/011/0016/0019

AUTHOR: Zubov, L. A.; Began, L. I.

TITLE: Die stamping small rings and bushings from liquid steel

SOURCE: Kuznechno-shtampovochnoye proizvodstvo, no. 11, 1964, 16-19

TOPIC TAGS: steel stamping, die stamping, liquid steel stamping, stamp press design

ABSTRACT: Various stamp presses were tested for optimal performance in stamping
pieces with a safe film across the center (type 1), bushings with a deep broach (type 2),
and ring-shaped pieces with a large central hole (type 3) from liquid steel. Three presses
were tested: a press with a cushioned punch-stamp (see Fig. 1 of the Enclosure), a press
with an embedded lower core (see Fig. 2 of the Enclosure), a press with an embedded lower
core (see Fig. 2 of the Enclosure), and a press with lower ejector-base (see Fig. 3 of the
Enclosure). In the experiments, the relatively cool presses with temperatures not above
250-350C caused formation of a surface scale on the piece to be stamped, which ranged
between 1 and 10 kg in weight. It was found that pieces of type 1 are best produced by
presses with cushioned punch-stamps, pieces of type 2 by presses with embedded lower
cores, and pieces of type 3 by presses with lower core-ejectors. The presses are simple
and consequently inexpensive; the product is up to 95% acceptable. This method is there-

Card 1/5

L 20080-65

ACCESSION NR: AP4049118

fore an excellent one to use. Orig. art. has: 6 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00   ENCL: 03   SUB CODE: MM, IE

NO REF SOV: 000   OTHER: 000

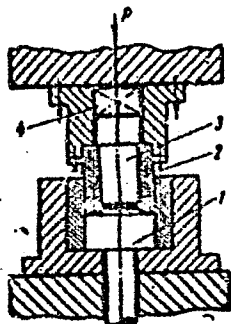Card 2/5

L 20080-65

Fig. 1. Press with cushioned punch-stamp: 1. stamp; 2. stamp bushing; 3. punch; 4. cushion

Card 3/5

L 20080-65
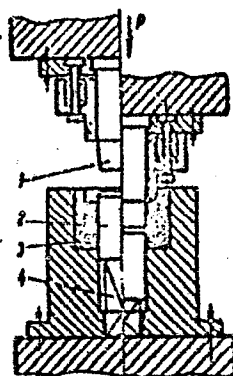ACCESSION NR: AP4049118   ENCLOSURE: 02

Fig. 2. Press with embedded lower core: 1, stamp; 2, base;
3, die; 4, spring cushion

Card 4/5

L 20080-65
ACCESSION NR: AP4049118
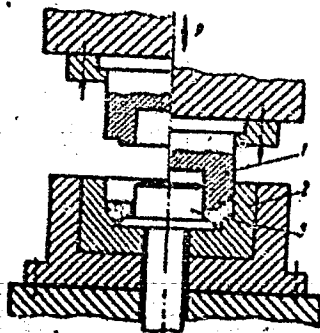
ENCLOSURE: 03

Fig. 3. Press with lower ejector-base: 1. stamp; 2. die; 3. base

Cord 5/5

L 56014-65   EWT(m)/EPF(c)/EWA(d)/EWF(t)/EWF(k)/EWF(b)/EWA(c)   Pf-4   JD/HW/WB
ACCESSION NR: AP5012176   UR/0128/65/000/004/0038/0039
                                                     621.746.043:669.14

AUTHOR: Zubov, L. A.; Began, L. I.   2 8
                                                                        B
TITLE: Pressing parts from liquid steel with pressurized die charging

SOURCE: Liteynoye proizvodstvo, no. 4, 1965, 38-39

TOPIC TAGS: liquid metal, steel, metal stamping, metal physical property

ABSTRACT: In the attempt to eliminate common pouring defects such as porosity and
undesirable surface roughness during liquid metal stamping, the die was filled
under pressure. Parts studied were a flange and a gear weighing 2.62 and 3.2 Kg
respectively. Pouring temperature was 1600°C while the tool surface was maintained
at 200°C. The authors recommend using a hydraulic or pneumatic self-acting device
to operate the diaphragm letting in the pressurized metal rather than their keying
device linked to the action of the main press. Results showed much improved sur-
faces. Mechanical properties in all directions were equal to those of a similar
forged part of the same steel. A fine crystal structure and a constant fine grain
size was noticed throughout the entire volume. Intercrystalline corrosion resis-

Card 1/2

L 56014-65

ACCESSION NR: AP5012176   O

tance of the austenitic alloy was found to be superior to other castings of the
same metal. Large savings in expenditure of metal and time per casting compared
with common casting and forging techniques in addition to superior properties re-
lative to other castings lead to a significant lowering in unit costs. Orig. art.
has: 3 figures, 1 table.

ASSOCIATION: none

SUBMITTED: 00   ENCL: 00   SUB CODE: IE, MM

NO REF SOV: 000   OTHER: 000

Card 2/2

ZUBOV, L.A., inzh.; BEGAN, L.I., inzh.; MIKHAYLENKO, B.Ye., inzh.

Mechanization and automation of steel proportioning in molten-metal pressing. Mashinostroenie no.6:72-73 N-D '65.

(MIRA 18:12)

L 27415-66   EWT(d)/EWT(m)/EWP(c)/EWP(v)/T/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(1)   IJP(c)

ACC NR: AP6012321   JD/HW   SOURCE CODE: UR/0304/65/000/006/0072/0073

AUTHORS: Zubov, L. Ya. (Engineer); Began, L. I. (Engineer); Mikhaylenko, B. Ye. (Engineer)

ORG: none

TITLE: Mechanization and automation of steel dosing in the liquid stamping process

SOURCE: Mashinostroyeniye, no. 6, 1965, 72-73

TOPIC TAGS: metal stamping, metal melting, metallurgic machinery, steel

ABSTRACT: A set of metal pouring devices (PZU's) was developed at the Kramatorsk Institute of NIIPTmash for accurately dosing out small quantities of steel (1--10 kg) into molds. Three sizes, PZU-1.5 (0.5--1.5 kg), PZU-4 (2--4 kg), and PZU-8(0--8 kg) were built (see Fig. 1) and used in automated casting operations in which each mold has one of the PZU's mounted on a frame. A hydraulic cylinder empties the PZU into the mold, and a new charge is introduced in solid form (by weight). The crucible of the PZU was found to withstand 60-100 melting cycles, and a special metal mold was designed for forming and baking of new crucibles. The dosing accuracy of the PZU's

Card 1/2   UDC: 621.96
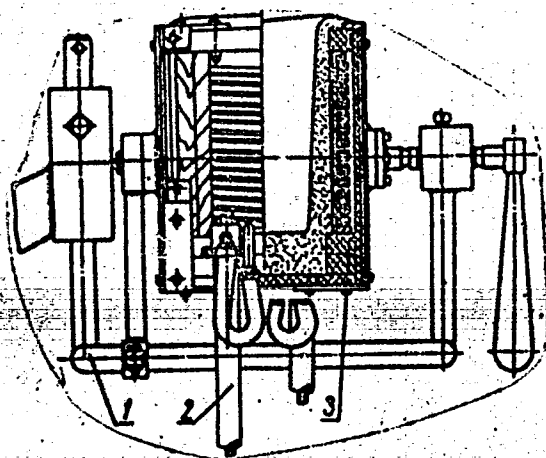
L 27415-66

ACC NR: AP6012321

Fig. 1. PZU-8: 1 - pouring lever; 2 - cooling water lines; 3 - induction furnace.

was found to be 0.5--2%. Orig. art. has: 3 figures.

SUB CODE: 13, 11/   SUBM DATE: none

Card 2/2

L 05687-67   EWP(k)/EWT(m)/EWP(t)/ETI   IJP(c)   JD/HW

ACC NR: AP6022186   SOURCE CODE: UR/0418/66/000/002/0037/0038

AUTHOR: Zubov, L. A. (Engineer); Began, L. I. (Engineer)   38

ORG: None   B

TITLE: Press forging of machine parts by using liquid 1Kh18N9T steel

SOURCE: Tekhnologiya i organizatsiya proizvodstva, no. 2, 1966, 37-38

TOPIC TAGS: machine industry, metal forging, hot forging, molten metal forging,
stainless steel / 1Kh18N9T stainless steel

ABSTRACT: An improved device for press forging of liquid stainless steel is described.
This device was designed by the Kramatorsk Institute
NIIPTmash and is shown in Fig. 1. The liquid metal is
poured into a special chamber (5) located under the die
(3) and then squeezed through the diaphragm (4) under
the pressure of the header punch (1 and 2) and the com-
pression of the spring (6). Fig. 1 shows the initial
position (a) and final position (b). By using this
method of molten metal forging, various articles and
machine parts of 1 to 10 kg of high mechanical and anti-
corrosive properties can be produced. Orig. ar. has:
1 figure.

Fig. 1

SUB CODE: 13/   SUBM DATE: None

Cmd 1/1
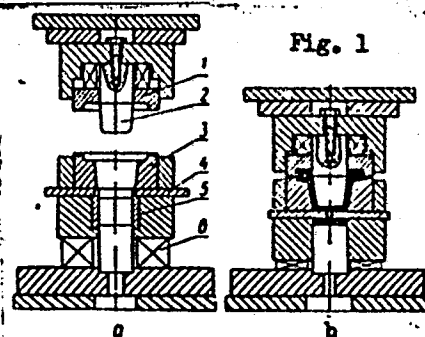
UDC: 621.73.034

NIZAMOV, S.K., inzh.; BEGAN-BOGATSKIY, P.Z., inzh.

Narrow gauge MD54-4 diesel locomotive. Elek.i tepl. tiaga 5
no.12:32 D '61.   (MIRA 15:1)
                        (Diesel locomotives)

AUTHOR: Begandt, V.

TITLE: Foundry Equipment at the Leipzig Fair in 1960

PERIODICAL: Liteynoye proizvodstvo, 1960, No. 7, pp. 16-18

TEXT: The article contains a brief description of various foundry equipment
exhibited by the Leipzig Metallurgical Plant. The KSW2 sandslinger hardens
cores in 30 seconds in a single operation by adding CO_2. This is an improved
type of the KS2 sandslinger which was connected with the CO_2 dosing plants.
A brief description of the mode of operation is given. For smaller found-
ries a portable CO_2 dosing machine controlled by an electronic switch with
mixing mechanism connected to an electromagnetic valve, has been designed.
In addition the KS 6.3 and KS 12.5 sandslinger designed for the production
of medium-sized cores and for non-mechanized auxiliary operations were shown.
Technical data are given. The KSt-80 nozzle sandslinger has been designed
for the production of round or shaped cores. It ensures even packing and a
satisfactory gas permeability of cores which cannot be achieved by manual
Card 1/2

Foundry Equipment at the Leipzig Fair in 1960   S/128/60/000/007/002/017
                                                   A105/A033

packing. It can be equipped with a CO$_2$ dosing plant. The 150 l VKM150 vertical mixer for mixing of blends with viscous fortifiers has a capacity of 1.5-3 cu m/min. Sand-cement mixers are equipped with new lever gates which make it possible to draw mixture samples during operation. The PLS400 metal shot cleaning chamber is used in foundries producing large quantities of long and flat castings. The continuous-motion PTSK1250 metal shot drum has a diameter of 1,250 mm, a capacity of 20 kg and is used for products of 25-500 mm size. Its capacity is 6, 6 and 3 ton/h at respective speeds of 0.74, 0.60 and 0.26 m/min for gray and wrought iron and steel casts. The PTG1000 compressor cleaning drum was considerably improved by the addition of two cleaning nozzles. Besides, the following cleaning machines were exhibited: the PDS2500 shot blast chamber with a revolving table, the PUS1800 shot blast chamber with suspension conveyer and the PRS900 caterpillar shot blast drum. There are 8 figures.

Card 2/2

MINKIN, Ye.V., aspirant; SHESTAKOVA, I.S., doktor tekhn. nauk, prof.;
BEGANOV, F.M., inzh.

Effect of the preliminary treatment of collagen on its dissolving.
Report No.3. Nauch. trudy MTILP no.27:42-47 '63.
(MIRA 17:11)
1. Kafedra tekhnologii kozhi i mekha Moskovskogo tekhnologicheskigo
instituta legkoy promyshlennosti.

Methods for the evaluation of the tendency of stainless steels to undergo intercrystalline corrosion. A symposium. Discussion of methods of determination of the tendency of stainless steels to undergo intercrystalline corrosion. I. A. Izmm. Zavodskaya Lab. 21, 546-50(1955).—A review, with 27 references. Foreign practice of control determinations of the tendency of stainless steels to undergo intercrystalline corrosion. A. V. Shreider, Ibid. 551-6.—A review. Methods for the determination of the existence of intercrystalline corrosion in stainless-steel apparatus. I. L. Rozenfel'd, Z. A. Vratsevich, and M. V. Bezanov. Ibid. 557-9.—A flat surface of the app. is ground with an emery wheel and the grooves produced examd. under a magnification of 75-160 times. Only longitudinal grooves are seen in the absence of corrosion, but they are crisscrossed with cracks when there is intercryst. corrosion.   W./d. S
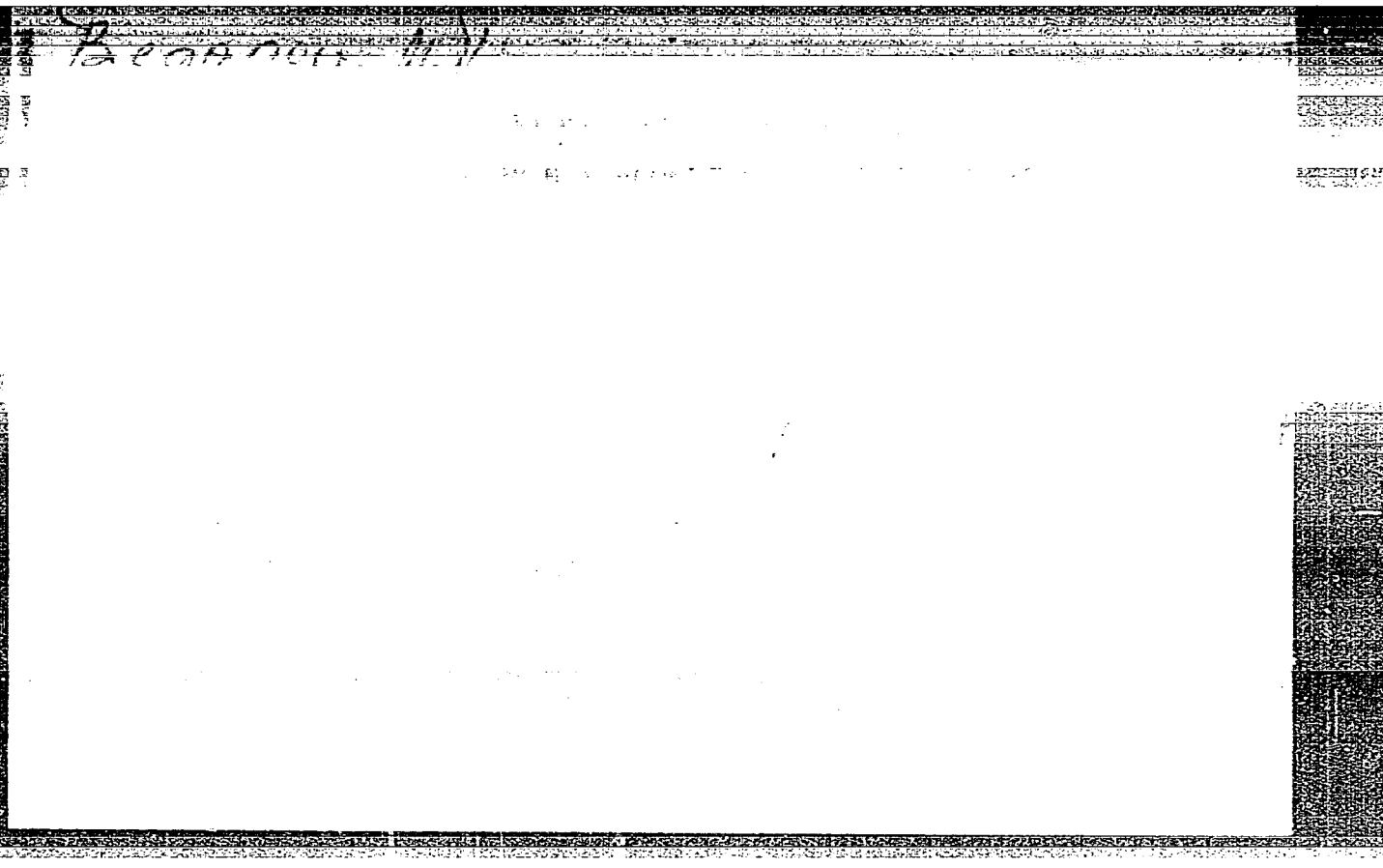
BEGANOVIC, A.

YUGOSLAVIA/Chemical Technology. Chemical Products and Their   H
          Application, Part 3. - Food Industry.

Abs Jour: Referat. Zhurnal Khimiya, No 21, 1958, 72360.

Author : A. Beganovich
Inst   :
Title   : New Accomplishments in Treatment and Conservation
          of Meat.

Orig Pub: Veterinaria (Jugosl.), 1957, 6, No 4, 630-635.

Abstract: Review. Bibliography with 21 titles.

Card   : 1/1

BEGANOVIC, A.C.

The antigenic variations of Salm. pullorum in serological typing of stains in Yugo (In Serbo-Croatian)

Vet Arh 21:465-471 Dec. 1951

BEGANOVIC, Hadzi Avdo

ass. of the Federal Inst. for Vet Service

Dr. Eugen Topolnik - docent for microbiology at Vet. Fac. Zagreb University

Lamb Dysentery

Source: Vet broj 3-4, p.219, 1952

BEJANOVIC, A. H.

"Streptococcus agalactiae in sheep." Vet. Fac. U. of Sarajevo, & Inst. of Vet. Med.
Research People's Republic of Croatia.

Vet. Sarajevo 1 : 843-845, 1952

BEJANOVIC, A. H.

"Diagnosis & differentiation of S. pullorum & S. gallinarium by bacterioplague." Federal
Inst. of Vet. service & Dept. of Midrobiology, Vet. Faculty Univ. of Zagreb.

Vet. Archiv. 21 : 548-553

BEGANOVIC, H. A.

"Properties of Micrococci - the Causal Agents of Gangrenous Mastitis of Sheep & Goats in Croatia." Assistant Professor Vet. Faculty, Sarajevo.

SOURCE: Vet. SVEZAK 4, p. 696, 1953

USSR

Alteration of the structure-mechanical properties of bread dough by mechanical treatment. B. A. Nikolaev and L. S. Beganskaya. *Kolloid. Zhur.* 16, 455-63(1954); cf. *Doklady Akad. Nauk S.S.S.R.* 90, 595(1953).—Mech. treatment of dough affected its modulus of shear (E) and viscosity (η), both detd. in a new app. (illustrated). Passing the dough through a mincer often lowered E (e.g., from 2.1×10^5 to 1.7×10^4 dynes/sq. cm.), and always lowered η (e.g., from 7×10^4 to 4×10^4 poises); the bread made from the minced dough had a greater sp. vol. than the standard bread. Mech. treatment of dough can be used to improve the bread structure. _____ J. J. Bikerman

Бега нс Кая, Л·Э·

124-1957-10-12299

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 10, p 151 (USSR)

AUTHORS: Nikolayev, B. A., Beganskaya, L. S.

TITLE: Measuring and Regulating the Resilient-elastic and Viscoplastic
           Properties of Dough (Izmereniye i regulirovaniye uprugo-
           elastichnykh i plastichnovyazkikh svoystv testa)

PERIODICAL: V sb.: Tr. 3-y Vses. konferentsii po kolloid. khimii, 1953,
             Moscow, AN SSSR, 1956, pp 209-222

ABSTRACT: The article describes an apparatus (D. M. Tolstoy's type) for
           studying the rheological characteristics of dough, based on the
           principle of longitudinal shear of the system under investigation.
           between two parallel plates which, during an experiment, are
           inclined relative to the horizontal. The shear of the upper plate
           is occasioned by the tangential component of the force of gravity.
           The rheological characteristics of the dough were computed from
           the kinetic curves of the development and decline of the deform-
           ation. In addition to the already well known deformation character-
           istics, three newly proposed characteristics are obtained: A
           so-called "conditional plasticity"; a "thinning with time"; and
Card 1/2   a "deformation strengthening". An investigation was made of

BEGANSKAYA, L S

Elastic-viscous properties of macaroni and pastry dough. B. A. Nikolaev and L. S. Beganskaya (Sci. Research Inst. Baking Ind., Moscow). *Kolloid. Zhur.* 18, 67-71(1956); cf. *C.A.* 49, 7767*c*.—The gluten of hard wheat had a higher modulus (E) of shear and a higher viscosity (η) than the gluten of regular wheat. The ratio r of the deformation after load removal to the max. deformation under load was smaller for a dough from hard wheat than for a regular dough. Aging and repeated deformation affect E, η, and r. Addn. of 20% sugar to a dough lowered its E from 86 $\times$ 10^4 to 3 $\times$ 10^4 dynes/sq. cm., while addn. of 20% margarine to another dough reduced its E from 41 $\times$ 10^4 to 9 $\times$ 10^4. The η was lowered by sugar and margarine in similar proportions. Margarine usually raised r.   J. J. Bikerman

SHCHERBATENKO, V.V.; MIKULINSKAYA, L.R.; BEGANSKAYA, L.S.; ZUBKOV, I.A.;
GRINEVICH, K.P.; KOTRELEV, V.N.; VOLODIN, P.A.

Use of organosilicon compounds and fluoroplast in the baking
industry. Trudy TSNIIKHP no.8:85-88 '60.   (MIRA 15:8)
          (Bakers and bakeries--Equipment and supplies)
                    (Protective coatings)

SHCHERBATENKO, V.V.; MIKULINSKAYA, L.R.; BEGANSKAYA, L.S.; ZURKOV, I.A.;
GRINEVICH, K.P.

Testing organosilicon compounds for the glazing of bread molds.
Trudy TSNIIKHP no.8:88-89 '60.   (MIRA 15:8)
(Bakers and bakeries—Equipment and supplies)
(Protective coatings)

SHCHERBATENKO, V.V.; MIKULINSKAYA, L.R.; BEGANSKAYA, L.S.; CHERESHKEVICH, L.V.;
CHEGODAYEV, D.D.; YAVZINA, N.Ye.; GRIHEVICH, K.P.

Investigating the possibility of bread baking in molds coated with
polymeric materials. Trudy TSNIIKHP no.10:82-86 '62.

(MIRA 18:2)

BEGARYATSKIY, B. A.

"The Spectra of the Polar Lights in the Infra-Red Region." B. A. BEGARYATSKIY and M. I. MORDUKHOVICH. "DOKLADY AKADEMII NAUK USSR," No. 1/1952 p. 45.

BEGDASH, P.T., inzhener. ...

.It is necessary to change the wage system for repair workers. Masl.-
zhir. prom. 23 no.2 :38-39 '57.   (MIRA 10:4)

1. Yangi-Yul'skiy maslozavod no.4.
              (Wages)

BEGDASH, P.T., inzhener.

——————·Refrigerating screw press oil. Masl.-zhir. prom. 23 no.5:34-35 '57.
(MIRA 10:5)
1. Yangi-Yul'skiy maslozavod No. 4.
(Cottonseed oil)

BEGDASARIAN, G.

BEGDASARIAN, G.; SKOWRONSKA-SERAFINOWA, B.

"Chemistry and Biochemistry of Cyclic Fatty Acids. Pt. 2 Biological Effect of
Cyclic Acids." p. 25 (Wiadomosci Chemiczne Vol. 8, no. 1. Jan. 1954 Wroclaw.)

Vol. 3, no. 6

SO: Monthly List of East European Accessions./Library of Congress, June 1954, uncl.

BEGDASH, P.T., inzhener.

Method of reconditioning used filter cloths and utilization of the fat which they contain. Masl.-zhir.prom. 19 no.5:39 '54.(MLRA 7:9)

1. Bukharskiy maslozavod.
   (Oils and fats)

BEGE, Kh. A.

21349   BEGE, Kh. A. Obrazouanie znergii v zverzdakh. (Per. S. Angl.) Astrofiz.
          Sbornik. M., 1949, S. 116-60. - Bibliogr: S. 159-60.

          SO: Ietopis' Zhurnal'nykh Statey,No. 29, Moskva, 1949.

BEGE, Kh. A.

21348   BEGE, Kh. A.   Novye dannye C yadernykh reaktsiyakh vglerodnogo tsikla.
(Per. S. Angl.) Astrofiz. Sbornik, M., 1949, S. 161-64 - Bibliogr: 8 Nazv.

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949.

BEGEL A.K.

IOFFE, A.F., akademik; SOMINSKIY, M.S., kand.fis.-mat.nauk, red.;
MASLAKOVETS, Yu.P., doktor fis.-mat.nauk, red.; SMOLENSKIY, G.A.,
doktor fis.-mat.nauk, red.; SHALYT, S.S., doktor fis.-mat.nauk, red.;
REGEL', A.R., kand.fis.-mat.nauk, red.; SUBASHIYEV, V.K., kand.fis.-
mat.nauk, red.; SHAGURIN, K.A., insh.; red.; ACHKINADZE, Sh.D., insh.;
FREGER, D.P., tekhn.red.

[The possibilities of semiconductors and their future development]
Vosmozhnosti i perspektivy poluprovodnikov. Leningrad, Leningr.
dom nauchno-tekhn.propagandy, 1957. 11 p. (Poluprovodniki, no.18)
                        (Semiconductors)

AUTHORS: Dubova, O. A., Begel'fer, K. I., Sazonova, P. A.,
             Puntikova, K. M.

TITLE: Complexometric Determination of Aluminum in High-alumina
             Materials

PERIODICAL: Steklo i keramika, 1960, No. 9, pp. 43-44

TEXT: The content of aluminum oxide in aluminous raw materials has so
far been gravimetrically determined in the laboratory. This method is,
however, time-consuming and does not permit a quick sorting of the
incoming raw material. In order to speed up analysis, the works laboratory
used the method of accelerated complexometric titration Al_2O_3 in aluminous
raw materials and refractories. In order to prove the suitability of this
method, a series of comparative analyses of Al_2O_3 were made by the
gravimetric and complexometric method, and are tabulated. These data show
the sufficient accuracy of the complexometric method. The method proposed
here is described next in detail. Trilon was used as a reagent. There are

Card 1/2

BEGEL'FER, K.I.; SAZONOVA, P.A.; FUNTIKOVA, K.M.

Rapid EDTA method of separate determination of the oxides Fe_2O_3 and Al_2O_3 in materials containing aluminum. Stek.i ker. 19 no.4:30-31 Ap '62.   (MIRA 15:8)

1. Lisichanskiy stekol'nyy zavod.
   (Acetic acid)   (Iron oxides)   (Aluminum oxides)

FUNTIKOVA, K.M.; SAZONOVA, P.A.; BEGEL'FER, K.I.

Rapid determination of iron oxides and aluminum in sand. Stek.
i ker. 20 no.10:40-41 O '63.   (MIRA 16:10)

(Sand, Glass—Analysis)   (Iron oxides—Analysis)
(Aluminum—Analysis)

YELANSKIY, N.N;BEGELMAN, A. A.

Cortico-organic theory of the etiology of endarteritis
obliterans. Khirurgiia, Moskva no.9:43-48 Sept. 1950.(CLML 20:1)

1. Of the Faculty Surgical Clinic imeni Academician N. N.
Burdenko (Director -- Prof. N. N. Yelanskiy), First Moscow Order
of Lenin Medical Institute. 2. Prof. N. N. Yelanskiy has the
title of Honored Worker in Science and A. A. Begel'man is a
Candidate Medical Sciences.

VISHNEVSKIY, A.A.' professor, predsedatel'; CHISTOVA, M.A., sekretar'; KESHI-
SHEVA, A.A.; KRICHEVSKIY, A.A., kandidat meditsinskikh nauk; UTESHEV,
S.S., kandidat meditsinskikh nauk; BEGEL'MAN, A.A., kandidat meditsin-
skikh nauk; YELANSKIY, N.N.; ZATSEPIN, T.S. professor; PLOTKIN, F.M.,
professor; PATSIORA, M.D.; KAZANSKIY, V.I., professor; TROYAN, I.V.;
FEDOROV, I.P.; FILIPPOV, A.V.; UTESHEV, S.S.; DOROFEYEV, V.I.

Minutes of the session of the Surgical Society of Moscow and Moscow Pro-
vince of September 26, 1952. Khirurgiia no.3:92-95 Mr '53. (MLRA 6:6)

1. Khirurgichekoye obshchestvo Moskvy i Moskovskoy oblasti. 2. Fakul'tet-
skaya chirurgicheskaya klinika sanitarno-gigiyenicheskogo fakul'teta I
Moskovskogo ordena Lenina meditsinskogo instituta (for Krichevskiy).
                              (Heart--Surgery)   (Arteries--Diseases)

BEGEL'MAN, A.A., dotsent; BOGDANOVA, E.A.; BUKHTEYEVA, N.F.

Diagnosis and treatment of obliterative peripheral vascular
diseases. Khirurgiia 40 no.4:140-145 Ap '64 (MIRA 18:1)

1. Fakul'tetskaya khirurgicheskaya klinika (zav. - prof.
N.N. Yelanskiy) I Moskovskogo ordena Lenina meditsinskogo
instituta imeni I.M. Sechenova.

SLUTSKIY, A.; REGEL'MAN, B.

  Organizing the management of repair plants without division in shops.
  Avt.transp. 36 no.8:29-32 Ag '58.   (MIRA 11:9)
    (Automobiles--Maintenance and repair)

BEGELMAN, T.A

"Present state of the problem of dental caries"
Stomatologiia no,1, 1952

LIGHTMAN, I.A.

"Organizatin of planned oral hygiene in children."
Stomatologiia, no. 3, 1952.

I. ENGELMAN

"A problem in the contemporary theory of caries. Tr. from the Russian. p. 145.
(STOMATOLOGIIA, No. 3, 1952, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, Vol. 2 No. 7, July 1953, Uncl.

BRONSTEIN, I.L., Prof.

"Zav. kafedroy terapevtic eskoy stomatologii Leningradskogo meditsinskogo stomatologicheskogo instituta."
Stomatologiia, 1952, no. 3, p. 3.

ENTIN, D.A., professor, zaslushennyy deyatel' nauki; BEGEL'MAN, I.A., professor.

Ideological conflict in a stomatology. Stomatologiia no.3:3-11 '53.
(MLRA 6:7)
(Mouth--Diseases)

BEGEL'MAN, I.A., professor (Khar'kov)

Pain perception in the pulp in connection with the differential diagnosis of acute forms of pulpitis. Probl. stom. 3:91-97 '56
(MLRA 10:5)

(TEETH--DISEASES) (PAIN)

BEGEL'MAN, I.A., prof.

Theoretical principles in the problem of caries. Stomatologiia
36 no.5:18-26 S-O '57.   (MIRA 11:1)
        (TEETH--DISEASES)

BEGEL'MAN, I.A., prof. (Khar'kov); DINERSHTEYN, Z.M., dots.[deceased] (Khar'kov); SERDYUKOVA, O.A., dots. (Khar'kov)

Vitamin C balance in patients with paradentosis. Probl.stom. 4:81-88 '58.   (MIRA 13:6)
                (GUMS--DISEASES)   (ASCORBIC ACID)

BEGEL'MAN, I.A.; BUGAYEVA, M.G.; BLANK, L.A.

Materials on the problem of caries; results of experimental studies.
Stomatologiia 39 no.6:3-13 N-D '60.   (MIRA 15:1)

1. Iz Odesskogo nauchno-issledovatel'skogo instituta stomatologii
(dir. - starshiy nauchnyy sotrudnik A.I.Marchenko).
(TEETH-DISEASES)

BEGEL'MAN, I.A., prof. (Odessa)

Vitality of dental enamel; apropos E.V. Borovskii and V.I.
Garadshi's article. Stomatologiia 42 no.3:73-78 My-Je'63
(MIRA 17:1)

BEGEMAN, F.; BUTTLAR, H.; GAUTERMANS, F.; ISAAK, N.; PICHCHIOTTO, Ye.

New method for determining the age of uranium minerals by means of the lead method. Biul.Kom.po opr.abs.vozr.geol.form.no.1; 80-85 '55.

(MIRA 9:10)

(Uranium--Decay)

BRGENDZHEV, B. M. Cand Geog Sci -- "Dynamics and morphology of the shores

of 'he Cheleken Peninsula." Baku, 1961. (Committee of Higher and Secondary

Specialized Education of the Council of Ministers AzSSR. Acad Sci AzSSR.

Inst of Geography). (KL, 4-61, 188)

-85-

$\beta E G E N D \cdots$

137-58-2-3849

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 224 (USSR)

AUTHOR: Begendzhev, S. K.

TITLE: Superstructure Transformations in Nickel Alloys (Sverkh-strukturnyye prevrashcheniya v nikelevykh splavakh)

PERIODICAL: Izv. AN TurkmSSR, 1957, Nr 2, pp 11-22

ABSTRACT: Changes in the longitudinal magneto-resistance $\Delta R/R_0$, the magnetization I, and the resistivity ρ of Ni-Mn- and Ni-Pt alloys having compositions similar to those of Ni_3Mn and Ni_3Pt were investigated relative to heat treatment. The specimens were subjected to homogenizing annealing at $1000^\circ C$ in vacuum. The specimens were brought to a disorder state by sudden quenching in water from 900°. Annealing was at temperatures ranging to 480°, with holding for up to 200 hours. The $\Delta R/R_0$ of the hardened alloy of a composition similar to Ni_3Mn is positive in sign and attains its maximum at a field intensity of $H=1000$ oersteds. In an ordered alloy of low H, $\Delta R/R_0$ also exists. When $H=100-200$ oersteds, the increase in $\Delta R/R_0$ due to technical magnetization ceases,
Card 1/2   and a sharp drop in its value is observed; this is explained by

Moscow State Univ. im M. V. Lomonosov.

137-58-2-3849

Superstructure Transformations in Nickel Alloys

an increase in the magnetization by the external field. When H approximates 1000 oersteds, the effect of technological magnetization drops to 0, and beyond that a negative effect due to the paramagnetic process is observed. At all anneal temperatures below the critical, there is first a rapid and then a slow drop in φ. The value of φ for the state of equilibrium is 25.7% smaller than for a hardened alloy. The I of an ordered alloy increases to 450 gauss. In the Ni_3Pt alloy, $\Delta R/R_0$ is positive in sign, rises rapidly in weak fields, and attains technical saturation when H is about 400 oersteds. Tempering significantly increases the value of $\Delta R/R_0$. The magnitude of φ drops particularly sharply when the annealing temperature is 450°. The existence of an ordered Ni_3Pt phase with a critical temperature of 450-500° has been confirmed. Investigation of Fe-Ni-Mo alloys has shown that addition of Mo to permalloy diminishes both the saturation I, and the longitudinal $\Delta R_{\parallel}/R_0$. Annealing after hardening increases the I value and diminishes the value of $\Delta R/R_0$.

L. M.

1. Nickel alloys—Transformations   2. Nickel alloys—Electrical properties—Effects of heat treatment

Card 2/2

137-58-6-13225

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 293 (USSR)

AUTHOR: Begendzhev, S.K.

TITLE: On Magnetoresistance and Thermomagnetic Phenomena in
            Ferro-nickel Alloys (O gal'vano- i termomagnitnykh yavleni-
            yakh v zhelezo-nikelevykh . splavakh)

PERIODICAL: Izv. AN TurkmSSR, 1957, Nr 5, pp 13-21

ABSTRACT: Investigation of longitudinal magnetoresistance (MR) and
            thermomagnetic effect in Fe-Ni alloys containing 5-95% Ni, in
            relation to their concentration and heat treatment. On a Ni_3Fe
            alloy the kinetics of ordering-disordering processes were in-
            vestigated by means of MR; magnetization was measured by
            the ballistic method; resistivity was also investigated. Heat
            treatment of all other alloys consisted of cooling in air (temp-
            ering) and heating for 2 hr at 100°C under vacuum and cooling
            within the furnace (annealing). All the measured values
            attained a minimum at 25-30% Ni. The MR value increased
            with an increase of Ni content and passed through a maximum
            at 80-85%. In 60-80% Ni alloys annealing increases MR during
Card 1/2   saturation which indicates superlattice transformations. In

137-58-6-13225

On Magnetoresistance and (cont.)

Ni_3Fe alloy the most intense superlattice formation is noted at 400-460°C.
As a result of passing into an ordered condition at saturation, MR increases
by 39.2% and magnetic saturation by 5.7%, whereas resistivity decreases by
21.6%.

P.S.

1. Iron nickel alloys--Magnetic factors   2. Iron nickel alloys--Resistivity
3. Iron nickel alloys--Teat treatment   4. Magnetism--Measurement

Card 2/2

BEGENEV, A.A.

Novyy metod obrazovaniya vidov krivykh tret'ego poryadka. Voronezh. Izv. Ped. in-ta
7: 1 (1940), 27-50.

SO: Mathematics in the USSR, 1917-1947
          edited by Kurosh, A.G.,
          Markushevich, A.I.,
          Rashevskiy, P.K.
     Moscow-Leningrad, 1948

BEGER, Solomon Izrailevich; BASKOV, Vilor Sil'vestrovich; TYUMENEVA,
S.T., inzh., red.; GRIGOR'YEVA, I.S., red.izd-va; GVIRTS, V.L.,
tekhn. red.

[Quantitative spectrum analysis of titanium-base alloys using the
method of electric spark contact sampling] Kolichestvennyi spekt-
ral'nyi analiz splavov na osnove titana s primeneniem metoda kon-
taktno-elektroiskrovogo otbora proby. Leningrad, 1962. 17 p.
(Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym
opytom. Seriia: Kontrol' kachestva produktsii, no.5) (MIRA 15:6)
        (Titanium alloys--Spectra) (Electric spark)

L 31559-66   EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)   GD/BC
ACC NR: AT6006206   SOURCE CODE: UR/0000/65/000/000/0017/0023

AUTHOR: Begera, Yu. A.

ORG: none

TITLE: Optimal control of dynamic plants in the presence of disturbances in the
assigning action

SOURCE: AN SSSR. Institut avtomatiki i telemekhaniki, Tekhnicheskaya kibernetika
(Technical cybernetics). Moscow, Izd-vo Nauka, 1965, 17-23

TOPIC TAGS: automatic control theory, control circuit, signal interference, optimal
control

ABSTRACT: The author investigates the problem of finding the optimum control action in
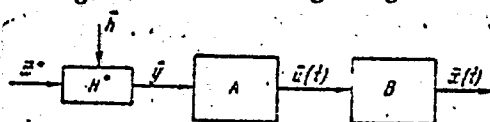the control circuit shown in Fig. 1. The following designations are used:

Fig. 1. Diagram of
a control circuit

A - the control component; B - the controlled plant; H* - the inertialess transmission

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L 31559-66
ACC NR: AT6006206   O

channel of the control action; $x^* = (x_1^*, x_2^*, \ldots, x_r^*)$ - the assigning action — the random
r-dimensional time-constant vector; $\bar{y}_s = (y_{1s}, y_{2s}, \ldots, y_{rs})$ - the output of the trans-
mission channel of the assigning action — the r-dimensional random vector; where
$y_{is} = \varphi(x_i, h_{is})$, $\varphi(x_i, h_{is})$ - a known function; $\bar{h}_s = (h_{1s}, h_{2s}, \ldots, h_{rs})$ - the disturbance
of the transmission channel of the assigning action — r-dimensional random vector with
independent components; $\bar{u}(t) = [u_1(t), u_2(t), \ldots, u_\ell(t)]$ - control action — ℓ -dimen-
sional vector; $\bar{x}(t) = [x_1(t), x_2(t), \ldots, x_m(t)]$ - the output of the controlled plant — the
m-dimensional vector. The analysis presented is a particular case in the application of the
theory of statistical solutions in automatic control problems, which was presented in the
general case in the book by A. A. Fel'dbaum (Osnovy teorii optimal'nykh avtomaticheskikh
sistem. Fizmatgiz, 1963). Orig. art. has: 26 formulas and 1 figure.

SUB CODE: 09,13 / SUBM DATE: 05Nov65 / ORIG REF: 003

Card 2/2

1. BEGESHEV, G.B.

2. USSR (600)

4. Cattle - Muyun Kum

7. Reclamation of the Muyun Kum desert sands, Sots. zhiv. 15 no., 1953.

9. Monthly List of Russian Accessions, Library of Congress, __APRIL__ 1953, Uncl.

MAKAROV, Aleksey Pavlovich; BEGESHEV, Gusman Gusmanovich; NAZARENKO, L.I.,
redaktor; NAGIBIN, P.I., tekhnicheskiy redaktor

[Experience with pasture reclamation in Muyun-Kum] Opyt pastbishchnogo
osvoeniia Muiun-Kumov. Alma-Ata, Kazakhskoe gos. izd-vo, 1956. 53 p.
(Muyun-Kum--Pastures and meadows)   (MLRA 10:8)

BEGEY, S. V.

USSR/Cultivated Plants - Fodder.   M.

Abs Jour   : Ref Zhur - Biol., No 4, 1958, 15668

Author   : Begey, S. V.
Inst   : -
Title   : Annual Fodder Crops for Post-Harvest Cultivation in
               Drogobychskaya Oblast'l
               (Odnoletniye kormovyye kul'tury dlya poslezhnivnogo
               vyrashchivaniya v Drogobychskoy oblasti).

Orig Pub   : Kolgospnik Ukraini, 1957, No 6, 20.

Abstract   : It is recommended on the basis of experiments performed
               at the Drogobychskaya Experimental Station that annual
               fodder crops be raised after the harvesting of the fall
               crops. The greatest yields were had from the Sternyanka
               turnip at 126.4 centners per hectare, the sunflower with
               vetch at 108.7 and the sunflower with peas at 115.1
               centners per ha. Sowings of corn and pure sunflowers
               yielded a considerably lower forage mass yield.

Card 1/1

BEGEY, S.V. [Behei, S.V.], aspirant

Sowing annual forage plants on stubble in the Carpathian Mountain region. Nauch. trudy UASHN 9:58-69 '59.   (MIRA 14:3)
            (Carpathian Mountain region—Forage plants)

BEDEY, S.V.

Drainage and use of reclaimed lands in the Carpathian Mountain region.
Gidr. i mel. 12 no.4:41-44 Ap '60.   (MIRA 13:9)

1. Drogobychskaya sel'skokhozyaystvennaya opytnaya stantsiya.
            (Lvov Province--Drainage)

BEGEY, S.V., kand. sel'skokhoz. nauk

Tillage after postharvest crops. Zemledelie 27 no.5:35-36 My '65.

(MIRA 18:6)

1. Predkarpatskaya sel'skokhozyaystvennaya opytnaya stantsiya.

AUTHOR: Begezhanov, T. (deceased). (Senior roller of the
               700-mill).   130-5-16/22

TITLE: Sheet-rolling mill operators increase productivity.
               (Listoprokatchiki povyshayut proizvoditel'nost').

PERIODICAL: "Metallurg" (Metallurgist) 1957, No.5, pp.33-34 (USSR).

ABSTRACT: The 700-mill at the Kazakhskiy works consists of two
               2-high stands served by two coal-fired furnaces. A
               12-man team operates a stand and furnace, each member
               being skilled in two or three specialist operations.
               Significant improvements in the operation of the mill
               in 1956 compared with 1955 are described and the
               rolling procedures, furnace-operating methods and
               organisational changes by which these improvements
               have been achieved are outlined. Recently-adopted
               measures include the use of an electric furnace for
               pre-heating rolls, the use of an improved lubricant
Card 1/1   and the provision of channels along the roll edges to
               prevent penetration of lubricant onto the working face.
               There are 2 figures, 2 tables.

ASSOCIATION: Kazakh metallurgical works (Kazakhsiy metallurgiches-
               kii zavod).

AVAILABLE:

BEGIASHVILI, A.I.

Def. at
Tbilisi State U.

Dissertation for Degree of
Candidate Mathematical Sciences

BEGIASHVILI, A.I.; TOGONIDZE, V.R.

Some generalizations of the problem concerning the pressure
of rigid profiles on a rectilinear boundary of an elastic
half-plane. Trudy GPI [Gruz.] no.1:9-15 '63.

(MIRA 18:2)

24.6720   S/058/62/000/004/133/160
                                                  A061/A101

AUTHORS: Begiashvili, G., Gedalin, E.

TITLE: Cherenkov radiation of a particle moving along the axis of a
              cylindrical waveguide filled with an anisotropic ferrodielectric

PERIODICAL: Referativnyy zhurnal, Fizika, no. 4, 1962, 15, abstract 4Zh98
              ("Tbilisis universitetis shormebi, Tr. Tbilissk. un-ta", 1960,
              v. 86, 285 - 289, Georgian; Russian summary)

TEXT: The Cherenkov radiation of a charged particle moving in a cylindrical
waveguide is considered. It is assumed that the waveguide is filled with an
anisotropic ferrodielectric, and that its axis coincides with the optical axis
of the crystal. For simplicity, the case of the particle moving along the axis
of the waveguide is considered.

[Abstracter's note: Complete translation]

Card 1/1

24(5)

AUTHORS: Begiashvili, G. A.,   Gedalin, E. V.   SOV/56-35-6-29/44

TITLE: On the Motion of a Charged Particle in an Anisotropic Medium
             (O dvizhenii zaryazhennoy chastitsy v anizotropnoy srede)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,
             Vol 35, Nr 6, pp 1513-1517 (USSR)

ABSTRACT: The energy losses of charged particles moving in an anisotropic
             dielectric have already been investigated (Refs 1-3).
             Sitenko and Kolomenskiy (Refs 4, 5) investigated the generalized
             case in which the medium is assumed to be optically active
             (gyroelectric anisotropic medium). Pafomov (Ref 6) investigated
             the Cherenkov radiation in an anisotropic ferrite by employ-
             ing a method developed by Ginzburg (Ref 1) for the investiga-
             tion of Cherenkov radiation in an anisotropic dielectric. In
             the present paper the components of the electromagnetic field
             and the energy losses of the charged particle moving in a
             medium with double anisotropy (ε and μ are anisotropic) are
             investigated by means of the method developed by Fourier
             (Fur'ye) (Ref 5). Besides, the medium is assumed to be gyro-
Card 1/3   tropic with respect to its electric and magnetic properties

SOV/56-35-6-29/44

On the Motion of a Charged Particle in an Anisotropic Medium

(Ref 7). This investigation is of interest in connection with the application of anisotropic ferrodielectrics for the purpose of producing microradiowaves.

The authors proceed from the representation of the electromagnetic field in the medium in which a point charge q moves with the velocity $\vec{v}$ as a Maxwell (Maksvell) system of equations. The latter is solved by the Fourier method. First, the motion of a point charge in an optically active uniaxial crystal with given tensors ε_{ik} and μ_{ik} is investigated. The formulae obtained are further investigated for the simple case in which the point charge moves along the optical axis. Finally, the case in which the point charge moves in the a direction that is vertical to the optical axis of the crystal is dealt with. In all cases expressions are derived for the total energy losses. In conclusion, the authors thank G. R. Khutsishvili for his valuable advice and directives. There are 7 references, 6 of which are Soviet.

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SOV/56-35-6-29/44

On the Motion of a Charged Particle in an Anisotropic Medium

ASSOCIATION: Tbilisskiy gosudarstvennyy universitet
            (Tbilisi State University)

SUBMITTED: June 28, 1958

Card 3/3

24.2120

65712

SOV/139-59-2-11/30

AUTHOR: Begiashvili, G. A.

TITLE: Cold Emission From Ordering Binary Alloys

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1959,
             Nr 2, pp 69-72 (USSR)

ABSTRACT: It is known that in ordered alloys, a number of physical
             properties have an "anomaly" depending on the degree of
             long-range order. One would therefore expect that there
             would be an anomalous cold emission of electrons by alloys
             in an electric field. This question is investigated
             theoretically in the present paper using the theory put
             forward by Smirnov in Ref 2. An expression is derived
             (Eq 5) for the cold emission current for a cubic body-
             centered lattice. In Eq (5) A, B, C, L and M are constants
             independent of temperature and field. Image forces are
             neglected. It is shown that the graph showing the cold
             emission current as a function of temperature should have
             a discontinuity at the Curie point. Since the barrier
             transmission coefficient D (cf equation at the bottom of
             p 69) depends on the field F, it follows that changes in
Card 1/2   D should lead to changes in the cold emission curves.

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SOV/139-59-2-11/30

Cold Emission From Ordering Binary Alloys

In particular $\dfrac{\Delta I}{I_0} = D\eta^2$ (6)

where ΔI is the difference between the cold emission current extrapolated from the cold emission curve above the Curie point and the actually observed current, I_0 is the current for $\eta = 0$ and η is the long-range order parameter. There are 4 Soviet references.

ASSOCIATION: Tbilisskiy gosuniversitet imeni I.V.Stalina (Tbilisi State University imeni I.V.Stalin)

SUBMITTED: February 24, 1958, (initially)
September 24, 1958 (finally)

Card 2/2

·24(3)
AUTHORS: Begiashvili, G. A., Gedalin, E. V.   SOV/56-36-6-52/66

TITLE: The Cherenkov Radiation of a Magnetic Dipole in an Anisotro-
                pic Medium (Cherenkovskoye izlucheniye magnitnogo dipolya v
                anizotropnoy srede)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
                Vol 36, Nr 6, pp 1939-1940 (USSR)

ABSTRACT: The Cherenkov radiation of a punctiform magnetic dipole in
                an isotropic medium has already been frequently investigated
                (Refs 1-5). The authors of the present "Letter to the Editor"
                carried out similar investigations of anisotropic and gyro-
                tropic media. By basing on the ε^{ik}- and μ_{ik}-tensors, the energy
                losses (the moment $\vec{\mu}_0$ is assumed to lie in the direction of
                motion) occurring as a result of Cherenkov radiation on a
                dipole moving along the optical axis with the velocity v are
                given by rather voluminous equations. For an anisotropic
                dielectric ($\mu_1 = \mu_3 = 1$) the radiation intensity differs from
                that of the isotropic dielectric only by the substitution of
                ε_1 for ε. ε_3 does not figure in the final result. The formula

Card 1/2   for the isotropic case coincides with the well-known

The Cherenkov Radiation of a Magnetic Dipole in an   SOV/56-36-6-52/66
Anisotropic Medium

> expression derived by I. M. Frank (Ref 1). The authors
> finally thank N. M. Poliyevktov-Nikoladze for his interest in
> this investigation. There are 5 references 4 of which are
> Soviet.

ASSOCIATION: Tbilisskiy gosudarstvennyy universitet (Tbilisi State Univer-
               sity). Institut fiziki Akademii nauk Gruzinskoy SSR (Physics
               Institute of the Academy of Sciences, Gruzinskaya SSR)

SUBMITTED: February 27, 1959

Card 2/2

81669

S/056/60/038/06/04/012
B006/B056

24.2500

AUTHORS: Begiashvili, G. A., Gedalin, E. V.

TITLE: Cherenkov Radiation of Dipole Moments in a Medium With
Spatial Dispersion

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 38, No. 6, pp. 1738-1739

TEXT: The Cherenkov radiation of charged particles in a medium with
spatial dispersion has repeatedly been investigated; the present paper
deals with the energy losses of particle clusters to Cherenkov radiation,
where it is assumed that the particles have electric and magnetic dipole
moments and are in an isotropic non-gyrotropic medium with spatial
dispersion. Further, the Cherenkov radiation of a closed current-carry-
ing ring in such a medium is investigated. The present investigation may
be useful for studying the possibilities of inciting new waves by means
of the Cherenkov effect, which occur when spatial dispersion is taken
into account. The authors use the mathematical symbols from Refs. 1 and 3.
In a range near the natural frequency of the medium $\vec{E} = (1/\varepsilon_0 + \beta n^2)\vec{D}$,

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Cherenkov Radiation of Dipole Moments in a   S/056/60/038/06/04/012
Medium With Spatial Dispersion   B006/B056

and the energy losses of an arbitrarily orientated electric dipole to

Cherenkov radiation are given by $dF = \dfrac{\omega^3 d\omega}{c^2 v} \sum_{i} \left\{ p_z^2 + \dfrac{p_r^2}{2} \left(\dfrac{v^2}{c^2} n_i^2 - 1 \right) \right\} \left(1 - \right.$

$\left. - \dfrac{c^2}{v^2 n_i^2} \right) |1 + \beta n_i^4 |^{-1}$, $n_{1,2}^2 = -1/\epsilon_0 \beta \pm \sqrt{(1/\epsilon_0 \beta)^2 + 1/\beta}$; Cherenkov

radiation of a frequency ω occurs only if $v > c/n_i(\omega)$, and forms two
cones for which the condition $\cos\vartheta_i = c/v n_i(\omega)$ holds. Here, ϑ_i is the
angle between the direction of motion of the dipole (Oz) and the
radiation. As already shown by V. L. Ginzburg, one of the roots of n_i^2
is always smaller than unity at $\beta > 0$, and Cherenkov radiation propagates
on the surface of the "ordinary" cone; at $\beta < 0$, the condition
$v > c/n_i(\omega)$ is satisfied for both roots, and Cherenkov radiation may
propagate on the surfaces of both cones. For this case, the intensity

Card 2/4

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Cherenkov Radiation of Dipole Moments   S/056/60/038/06/04/012
in a Medium With Spatial Dispersion   B006/B056

distribution of Cherenkov radiation among the two cones is investigated
(I_1 - radiation intensity on the "ordinary" cone, I_2 - on the "new"
cone), and equation (6) is given. At $\varepsilon_0^2 |\beta| \ll 1$ and $n_2^2 \gg n_1^2$, $I_2/I_1 \ll 1$
for dipoles orientated in the direction of motion, i.e., Cherenkov
radiation occurs nearly entirely only on the ordinary cone, and for
dipoles orientated perpendicular to the direction of motion, $I_2/I_1 \sim 1$.

When investigating the Cherenkov radiation of magnetic dipoles, a dif-
ference is made between current- and "true" dipoles; such dipoles are
described as "true" as form magnetic poles. For the frequency range
dealt with here, dF is given by equation (7) and (8), respectively, for
these two types of dipole. For a current magnetic dipole $I_2/I_1 \sim 1$ for
every orientation at $\varepsilon_0^2 |\beta| \ll 1$, for the "true" magnetic dipoles, if the
moment is in the direction of motion, $I_2/I_1 \sim 1$, and if it is
perpendicular to it, $I_2/I_1 \gg 1$. For a current-carrying ring moving
through the medium (I_0 - amperage, a - radius) dF is given by

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Cherenkov Radiation of Dipole Moments   S/056/60/038/06/04/012
in a Medium With Spatial Dispersion   B006/B056

equation (9) if the plane of the ring is perpendicular to the direction
of motion. When a → 0 this formula goes over into that for a magnetic
dipole. The authors finally thank N. M. Poliyevktova-Nikoladze for her
interest in this investigation. There are 4 Soviet references.

ASSOCIATION: Tbilisskiy gosudarstvennyy universitet (Tbilisi State
             University). Institut fiziki Akademii nauk Gruzinskoy SSR
             (Physics Institute of the Academy of Sciences of the
             Gruzinskaya SSR)

SUBMITTED: July 13, 1959 (initially) and February 17, 1960 (after
             revision)

Card 4/4

BEGIASHVILI, G.A.

Cyclotron resonance theory. Fiz. met.i metalloved. 11 no.6:945-955
Je '61.   (MIRA 14:6)

1. Tbilisskiy gosudarstvennyy universitet.
            (Cyclotron resonance)

24,7960   ' ·   **25911**   S/126/61/012/001/002/020 ,
                                                      E032/E414

AUTHOR: ·   Begiashvili, G.A.

TITLE: On the theory of diamagnetic resonance

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol.12, No.1,
             pp.16-19

TEXT: The diamagnetic resonance in semiconductors and metals has
been discussed by Ya.G.Dorfman (Ref.1: DAN SSSR, 1951, 81, 765),
R.B.Dingle (Ref.2: Proc.Roy.Soc., 1953, A212, 38), W.Shockley
(Ref.3: Phys.Rev., 1953, 90, 491), G.Dresselhaus, A.F.Kip and
C.Kittel (Ref.4: Phys.Rev., 1955, 98, 368).   However, these authors
are said to have limited their attention to a quadratic current-
carrier dispersion law.   The present author extends this to an ·
arbitrary dispersion law.   The analysis is confined to the case of
strong magnetic fields where the anomalous skin effect becomes
"normal", and also to metals of the bismuth type.   The problem is
thus reduced to the determination of the conductivity tensor and
the elucidation of its resonance properties.   The transport
equation for the electrons in a metal is, after linearization with
respect to the external high-frequency field, taken to be of the
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form

$$\frac{\partial \psi_i}{\partial \tau} + \gamma \psi_i = \tau_o v_i f_o'(\epsilon).$$

(1)

where the magnetic field is directed along the z axis,
v is the electron velocity

$$\tau_o = \frac{T_o}{t_o}, \quad \gamma = T_o\left(i\,\omega + \frac{1}{t_o}\right),$$

t_o is the relaxation time, ω is the frequency of the external
field, $f_o'(\epsilon) = -\delta(\epsilon - \epsilon_o)$ and ϵ_o is the limiting Fermi energy.
Substituting the solution of Eq.(1) (Ref.5: I.M.Lifshits,
M.Ya.Azbel', M.I.Kaganov. ZhETF, 1956, 31, 63)

$$\psi_i = \tau_o \int_0^{} e^{-\gamma \tau'} v_i(\tau - \tau')\, d\tau' f_o'(\epsilon).$$

into the conductivity tensor

$$\sigma_{ik} = -\frac{2e^2 t_o}{h}\int \psi_i v_k (dp)$$

(2)

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it is found that

$$\sigma_{ik} = -\frac{2e^2 H}{h^3 c}\int_{p_z^{min}}^{p_z^{max}}\frac{B_{ik}+iA_{ik}}{e^{1\tau}-1}dp_z,$$

(3)

where

$$B_{ik}+iA_{ik} = T\int^{T}e^{1\tau'}\overline{v_i(t')v_k(t'-t)}\,dt'.$$

In these expressions $T_0 = -2\pi m_0 c/eH$, $T = 2\pi/\Omega$,
Ω is the Larmor frequency given by

$$\Omega = \frac{2\pi eH}{c\,\partial S/\partial\varepsilon}$$ and $\frac{1}{2\pi}\frac{\partial S}{\partial\varepsilon}$ is the effective mass of the

electron. The bar over the symbols indicates averaging over the
period of the electron. For an arbitrary dispersion law one can
assume that near resonance

$$\Omega(\varepsilon_0,p_z) = \Omega_{\varepsilon x i} + \frac{1}{2}\Omega''(\varepsilon_\iota,p_z^{\varepsilon ni})(p_z - p_r^{\varepsilon ni})^2 + \cdots.$$

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and it then turns out that

$$\sigma_{ik} = \frac{e^2 H}{h^3 c}\left\{ \int_{p_z^{min}}^{p_z^{max}} (B_{ik} + iA_{ik})\, dp_z - \frac{1}{q}\sum_i \left[\frac{B_{ik} + iA_{ik}}{\sqrt{\beta}}\right]_{p_z = p_i} \times \right.$$

$$\left. \times \left\{\frac{1}{x_1}\left[\sqrt{\frac{x_1 + sx}{2}} + i\sqrt{\frac{x_1 - sx}{2}}\right]\right\}\right\}. \qquad (4) \qquad\qquad (4)$$

where $x_1 = \sqrt{x^2 + \xi^2}$, $\xi = \frac{1}{\omega\tau_0}$,

$$\omega = q\Omega_{ext}(1 + x), \quad \beta = \left|\frac{1}{2}\frac{\left[\frac{\partial^2 \Omega}{\partial p_z^2}\right]}{\Omega_{ext}}\right|,$$

$$s = \operatorname{sign}\frac{\partial^2 \Omega}{\partial p_z^2}\Big|\Omega_{ext}, \quad x = \frac{\omega - q\Omega_{ext}}{q\Omega_{ext}}.$$

In the case of semiconductors, it is shown that the resonance part is given by
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$$\sigma_{ik}^{res} \sim \frac{2\pi e^2 l_0}{h^2} \frac{eH}{c} \frac{\imath A\left(\imath^{ext}, p_s^{ext}\right)}{(4BC - D^2)^{\frac{1}{2}}} \ln\left(\Omega^{ext} - \omega\right).$$

where
$$B = \frac{1}{2} \left.\frac{\partial^2 \Omega}{\partial \varepsilon^2}\right|_{\substack{\varepsilon = \varepsilon^{ext}\\p_s = p_s^{ext}}} ; \quad C = \frac{1}{2} \left.\frac{\partial^2 \Omega}{\partial p_s^2}\right|_{\substack{\varepsilon = \varepsilon^{ext}\\p_s = p_s^{ext}}} ; \quad D = \frac{1}{2} \left.\frac{\partial^2 \Omega}{\partial \varepsilon \partial p_s}\right|_{\substack{\varepsilon = \varepsilon^{ext}\\p_s = p_s^{ext}}}.$$

In metals resonance can occur for frequencies $\omega = q\Omega_{ext}$ where q is an integer. Resonance can occur for an arbitrary polarization of the incident radiation and the singularity at the resonance point is of the form

$$\sigma \sim \frac{1}{\sqrt{\omega - q\Omega_{ext}}}.$$

In semiconductors, on the other hand, the resonance effect is reduced and has a logarithmic character (see above).
Acknowledgments are expressed to M.Y.Azbel' for suggesting the problem and discussing results and to I.M.Lifshits who pointed out
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the logarithmic character of the resonance in the case of
semiconductors.   There are 5 references: 2 Soviet and 3 non-Soviet.
The three references to English language publications are quoted in
the text above.

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SUBMITTED: November 15, 1960

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31048

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E039/E335

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AUTHOR: Begiashvili, G.A.

TITLE: On the influence of anomalous small zones on the
            high-frequency properties of metals in a DC magnetic
            field

PERIODICAL: Fizika metallov i metallovedeniye, v. 12, no. 4,
            1961, 499 - 506

TEXT: The problem of determining the surface impedance of
metals with two groups of electrons is examined theoretically
for the case where there is a principal group of electrons
having an anomalous skin-effect and a smaller group which is
normal (the electron density in the principal groups is assumed
to be $n_o = 10^{22}$ cm^{-3} and in the smaller group $n_M = 10^{18}$ cm^{-3}).

In the case of strong magnetic fields the condition when
$\Omega_M \gg \Omega_o \gg$ W is treated (here, $\Omega_M = eH/m_M c$ is the angular
rotation frequency of the electrons in the small group.
Similarly, Ω_o is the angular rotation frequency for electrons

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of the principal group, e is the electronic charge, H - the
magnetic field and m_M the effective mass of the electrons in
the small group). The condition $\Omega_M \gg \Omega_o$ is always true
because of the smaller effective mass of the electrons in the
small group. It is shown that the addition of small zones of
from 1 - 10% is permissible and its effect can be neglected. In
the case of weak magnetic fields, the condition $\Omega_N \gtrsim W \gg \Omega_o$
is considered. It is shown that, on account of the influence of
the small zones, we have impedance changes as for the normal
skin-effect and diamagnetic resonance. In the region of
diamagnetic resonance the contribution of the principal group
is small and near the point of resonance the impedance follows
the normal skin effect.   There are 9 references:
6 Soviet-bloc and 3 non-Soviet-bloc. The three English-
language references mentioned are: Ref. 1 - F. London - Proc.
Roy. Soc., 1940, A176, 522; Ref. 2 - G.E.H. Reuter,
E.H. Sondheimer - Proc. Roy.Soc., 1948, A195, 336; Ref. 9 -
G. Dresselhaus, A.F. Kip, C. Kittel, Phys.Rev., 1955, 98, 368.

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ASSOCIATION: Tbilisskiy gosudarstvennyy universitet im.
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SUBMITTED: December 22, 1960

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42245
S/126/62/014/004/001/017
E032/E314

AUTHOR: Begiashvili, G.A.

TITLE: On the theory of the anomalous skin effect in thin
           metal films in a magnetic field

PERIODICAL: Fizika metallov i metallovedeniye, v. 14, no. 4,
           1962, 481 - 486

TEXT: This paper is concerned with the anomalous skin effect
in thin metal films placed at right-angles to the magnetic field.
It is assumed that the electron dispersion law is quadratic and
the collision integral can be written down in the form
$(f - f_0)/\tau$, where f_0 is the equilibrium Fermi function,
τ is the time corresponding to the electron mean free path and
$v_0 \tau \sim \ell$, where v_0 is the limiting electron velocity and ℓ
is the mean free path. The problem is to determine the surface
·impedance of the film under the above assumptions. The problem
is solved by solving the linearized transport equation on the
assumption that the film thickness is much smaller than the mean
free path. A general expression is obtained for the current

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in terms of the electrical parameters and the distribution function. It incorporates a parameter q, which describes the nature of the reflection of electrons from the surface of the film. The solution is then specialized to $q = 0$ (diffuse reflection) and $q = 1$ (specular reflection). In each case, explicit expressions are obtained for the surface impedance. It is shown that in strong magnetic fields the surface impedance corresponding to right-handed and left-handed polarisations is different: the former corresponds to the anomalous skin effect and the latter to the normal skin effect. It is noted that in order that the effect be observed in fields which can be produced in the laboratory, it is necessary to use "poor" metals, e.g. bismuth.

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